Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Please amend claims 1, 2, 10-12, 15, 16 and 22-24 as follows:

1. (currently amended) An apparatus for creating alternate block phase inversion coded representations of an optical communication signal, the apparatus comprising:

a modulator adapted to[[:]] modulate a first and a second beam of continuous wave electromagnetic radiation with a source signal so that the first and second beams combine to produce streams of asserted and unasserted data bits, to assemble modulated portions of said first and second beams into a first electromagnetic radiation signal of interposed regular and alternate data bit sequences comprising blocks of asserted non return to zero coded data bits, each of said data bit sequences being interposed by blocks of unasserted data bits~~, in which mutually adjacent asserted data bits are conjoined~~, and to assemble modulated portions of said first and second beams into a second electromagnetic radiation signal of interposed regular and alternate data bar bit sequences comprising blocks of asserted non return to zero coded data bar bits representing said unasserted data bits, each of said data bar bit sequences being interposed by unasserted data bar bits representing said asserted data bits~~, in which mutually adjacent asserted data bar bits are conjoined~~; and

means for controlling modulation of said first and second electromagnetic radiation signal using information provided by said source signal, to shift the phase of said alternate data bit sequences and said alternate data bar bit sequences.

2. (currently amended) The apparatus of claim 1~~, further comprising:~~

~~means for modulating said first electromagnetic radiation signal with said source signal to shift the phase of said alternate data bit sequences; and~~

~~means for modulating said second electromagnetic radiation signal with said source signal to shift the phase of said alternate data bar bit sequences~~ wherein the means for controlling modulation of said first electromagnetic radiation signal and the means for controlling modulation of said second electromagnetic radiation signal employ a common control signal time shifted differently by said means for controlling modulation.

3. (original) The apparatus of claim 1, in which said modulator is an external modulator that is adapted to modulate the relative phases of said first and second beams of continuous wave electromagnetic radiation with said source signal and to then subject said first and second beams of electromagnetic radiation to mutual interference.

4. (original) The apparatus of claim 1 comprising means adapted to decode said second electromagnetic radiation signal into a copy of said first electromagnetic radiation signal, by converting said unasserted data bar bits into asserted data bits and by converting said asserted data bar bits into unasserted data bits.

5. (original) The apparatus of claim 1 in which said modulator is adapted to modulate first and second beams of continuous wave light.

6. (original) The apparatus of claim 1 further comprising means for transmitting said first and second electromagnetic radiation signals to a single destination, providing protection for said source signal against a signal transmission failure.

7. (original) The apparatus of claim 1 further comprising means for transmitting said first and second electromagnetic radiation signals to two destinations, bridging said source signal to said two destinations.

8. (original) The apparatus of claim 1 further comprising:

a transmitter for providing said source signal;

a receiver; and

an optical network having a first path and a second path, each of said paths being in communication with said transmitter and said receiver;

said apparatus adapted to transmit said first electromagnetic radiation signal from said transmitter to said receiver on said first path and to transmit said second electromagnetic radiation signal from said transmitter to said receiver on said second path.

9. (original) The apparatus of claim 1 further comprising:

a transmitter for providing said source signal;

first and second receivers; and

an optical network having a first path and a second path, said first path being in communication with said transmitter and said first receiver, and said second path being in communication with said transmitter and said second receiver;

said apparatus adapted to transmit said first electromagnetic radiation signal from said transmitter to said first receiver on said first path and to transmit said second electromagnetic radiation signal from said transmitter to said second receiver on said second path.

10. (currently amended) The apparatus of claim ~~2~~1 further comprising:

a transmitter for providing said source signal;

a receiver; and

an optical network having a first path and a second path, each of said paths being in communication with said transmitter and said receiver;

said apparatus adapted to transmit said first electromagnetic radiation signal from said transmitter to said receiver on said first path and to transmit said second electromagnetic radiation signal from said transmitter to said receiver on said second path.

11. (currently amended) The apparatus of claim ~~2~~1 in which said means for controlling modulation of said first electromagnetic radiation signal using information provided by with said source signal to shift the phase of said alternate data bit sequences comprises a phase modulator.

12. (currently amended) The apparatus of claim ~~2~~1 comprising means adapted to simultaneously shift the phases of said alternate data bit sequences and of said alternate data bar bit sequences by directing modulation of said first and second electromagnetic radiation signals said source signal.

13. (original) The apparatus of claim 3 in which said external modulator comprises a dual output intensity modulator.

14. (original) The apparatus of claim 12 in which said means adapted to simultaneously shift the phases of said alternate data bit sequences and of said alternate data bar bit sequences comprises a toggle flip flop circuit.

15. (currently amended) A method of creating alternate block phase inversion coded representations of an optical communication signal, comprising:

~~the steps of~~ modulating a first and a second beam of continuous wave electromagnetic radiation with a source signal so that the first and second beams combine to generate streams of asserted and unasserted data bits[[,]];

generating a first electromagnetic radiation signal of interposed regular and alternate data bit sequences comprising blocks of asserted non return to zero coded data bits, each of said data bit sequences being interposed by blocks of unasserted data bits~~, in which mutually adjacent asserted data bits are conjoined, and~~;

generating a second electromagnetic radiation signal of interposed regular and alternate data bar bit sequences comprising blocks of asserted non return to zero coded data bar bits representing said unasserted data bits, each of said data bar bit sequences being interposed by blocks of ~~unasserted data bar bits representing said asserted data bits, in which mutually adjacent asserted data bar bits are conjoined~~;

modulating said first electromagnetic radiation signal using said source signal to shift the phase of said alternate data bit sequences; and

modulating said second electromagnetic radiation signal using said source signal to shift the phase of said alternate data bar bit sequences.

16. (currently amended) The method of claim 15~~, wherein the initial display of information contained in metric records is conducted according to directions contained in the metric records~~ further comprising:

utilizing a common control signal time shifted differently in said modulating said first and second electromagnetic radiation signal.

17. (original) The method of claim 15 in which said step of modulating comprises modulating the relative phases of said first and second beams of continuous wave electromagnetic radiation with said source signal to produce first and second output signals, and then launching said first and second output signals into a propagation medium such that said first and second output signals mutually interfere, producing said first and second electromagnetic radiation signals.

18. (original) The method of claim 15 comprising the further step of decoding said second electromagnetic radiation signal into a copy of said first electromagnetic radiation signal by converting said unasserted data bar bits into asserted data bits and by converting said asserted data bar bits into unasserted data bits.

19. (original) The method of claim 15 comprising the further step of transmitting said first electromagnetic radiation signal and said second electromagnetic radiation signal from an origination point to a termination point over two different paths to provide protection for said source signal against a signal transmission failure.

20. (original) The method of claim 15 comprising the further step of transmitting said first electromagnetic radiation signal and said second electromagnetic radiation signal from an

origination point to two different termination points over two different paths to provide bridging of said source signal.

21. (original) The method of claim 15 in which each of said first electromagnetic radiation signal and said second electromagnetic radiation signal is an optical signal.

22. (currently amended) The method of claim ~~16~~15 in which said steps of modulating said first and second electromagnetic radiation signal with said source signal comprise simultaneously shifting the phases of said alternate data bit sequences and said alternate data bar bit sequences.

23. (currently amended) The method of claim ~~16~~15 comprising the further step of transmitting said first and second electromagnetic radiation signals over a distance sufficient to generate chromatic dispersion resulting in some overlap between said data bit sequences and in some overlap between said data bar bit sequences, producing destructive interference.

24. (currently amended) The method of claim ~~16~~15 in which said step of modulating said first and second electromagnetic radiation signals with said source signal comprises shifting said phases by about 180°.

25. (previously presented) The method of claim 17 in which said step of modulating comprises controlling such mutual interference to selectively and simultaneously create said asserted data bits and said unasserted data bar bits.